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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,757	09/17/2003	Eiji Hayashi	Q77556	3827

23373 7590 12/13/2006

SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER

BOES, TERENCE

ART UNIT	PAPER NUMBER
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3682

DATE MAILED: 12/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/663,757

Applicant(s)

HAYASHI, EIJI

Examiner

Terence Boes

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 1-14, 16 and 19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15, 17 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Prosecution Application

1. The request filed on 11/17/2006 for a Continued Examination (RCE) is accepted and a continued prosecution application has been established. An action on the RCE follows.

Election/Restrictions

2. Claims 1, 2, 4, 16, and 19 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: The elected species 1 is drawn to figures 1-3. Claims 1, 2, 4, 16, and 19 are clearly drawn to species 4, figures 6, 7, and 8. The limitation, "wherein the side cap is divided into two members along the ball circulation passage" is not disclosed in species 1, rather this limitation is only found in species 4.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Furthermore, an election of species 1 was made without traverse on 03/06/2006. Accordingly, claims 1, 2, 4, 16, and 19 are withdrawn from consideration as being directed to a non-elected species. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 15, 17 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Bohnhoff (USPN 3,170,336).

Bohnhoff discloses:

- A screw shaft (10) including a spiral-shaped screw groove (10a,10b) formed in an outer peripheral surface thereof
- A nut (12) movably fitted with the screw shaft and including a screw groove formed in an inner peripheral surface thereof so as to correspond to the screw groove of the screw shaft
- A plurality of balls (14) rollably disposed in a loaded raceway formed between the two screw grooves
- At least one side cap (16) mounted on a circumferential surface (see figure 3 below (A)) of the nut and including a ball circulation passage (22a, 22b) substantially extending in a longitudinal direction of the screw shaft and a ball scooping up portion for scooping up the balls rolling along the raceway in a direction coincident with the lead angle of the two screw grooves and returning the balls to the raceway

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- Two screw grooves are respectively formed as multiple thread screws (10a,10b) and one of the side caps (16) is disposed on each of the multiple threads (10a, 10b see figs 2 and 3).
- Wherein the side cap (16) further comprises a pair of ball scooping up portions (see ball circulation passage, both sides, at 23) and a cap main body (16)
- Wherein the nut further comprises an axial end surface (see figure 3 below (B)), and the circumferential outer surface is a cylindrical surface extending perpendicular to the axial end surface.

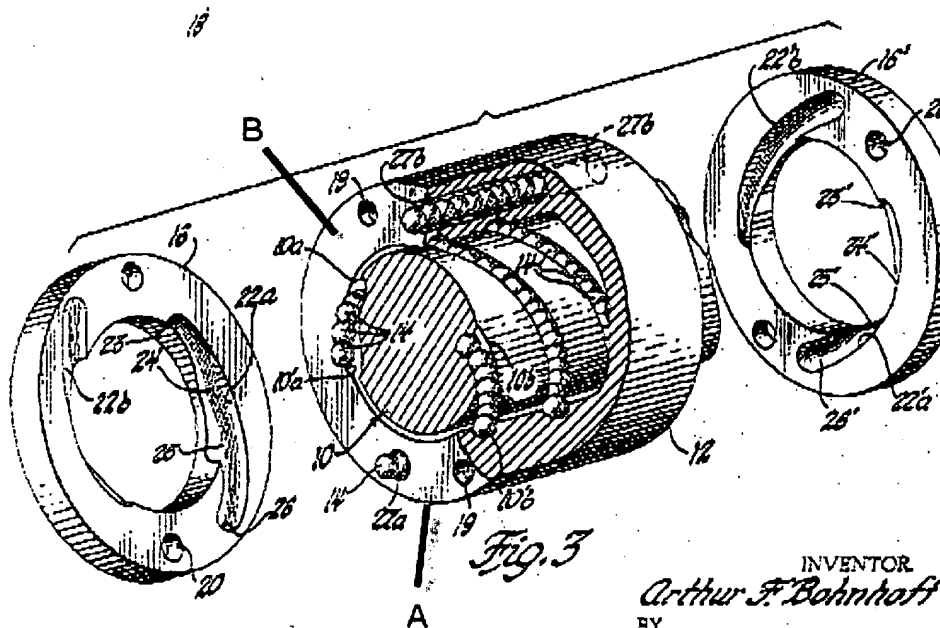


Fig. 3

INVENTOR
Arthur F. Bohnhoff
 BY
a. m. Hester
 ATTORNEY

Response to Arguments

4. Applicant's arguments filed 10/18/2006 have been fully considered but they are not persuasive.

Applicant argues:

1. First, Bohnhoff discloses a side cap 16 having two ball circulation passages, wherein the following problem occurs. Namely, when the ball is rolled in the raceway or the ball circulation passage due to foreign substances etc., the ball pushes up the side cap and a crack may be generated in the side cap 16 from around the bolt 18. Therefore, the side cap will be broken and fall from the nut 12. In such a case, because the other ball circulation passage is formed on the same side cap 16, the other ball circulation passage does not work, even though the balls can roll in the other ball circulation passage. That is, when one ball circulation passage is blocked, the other ball circulation passage also loses its function.

In contrast to that set forth in Bohnhoff, the claimed structure sets forth one circulation passage for one side cap and, therefore, the above-noted problem does not occur.

- a. In response to applicant's argument, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If

the prior art structure is capable of performing the intended use,
then it meets the claim.

2. Second, claims 1 and 2 independently set forth that the side cap is divided into two members along the ball circulation passage. In contrast to that set forth in claims 1 and 2, Bohnhoff discloses a side cap 16 have a one-piece construction.

- a. In response, Claims 1, 2, 4, 16, and 19 have been withdrawn as being drawn to a non-elected species.

3. Third, claim 2 sets forth that the nut comprises an axial end face, and a cylindrical outer circumferential surface extending perpendicular to the axial end face. Further, claim 2 sets forth that the side cap is disposed on that cylindrical outer circumferential surface. In contrast to that set forth in claim 2, Bohnhoff discloses a cap 16 mounted on the axial end face of the nut. Because claim 2 sets forth both an axial end face and a cylindrical outer circumferential surface, the Examiner's previous interpretation of Bohnhoff's axial end surface as the outer circumferential surface is now not appropriate.

- a. In response, Claims 1, 2, 4, 16, and 19 have been withdrawn as being drawn to a non-elected species. Furthermore, a marked up copy of figure 3 has been included which more clearly points out an axial end face (A) and a circumferential surface (B)

4. Fourth, claim 15 sets forth at least one side cap including a ball circulation passage substantially extending in a longitudinal direction of the screw shaft. In contrast to that set forth in claim 15, Bohnhoff discloses ball circulation passages 22a, 22b that extend in a direction perpendicular to the longitudinal direction of the screw shaft.

- a. In response, the examiner notes that Bohnhoff clearly discloses a ball circulation passage that extends in a longitudinal direction of the screw shaft (C3/L1-30). The balls are clearly shown extending from the nut into the side cap, thus the ball circulation passage extends in a longitudinal direction of the screw shaft as claimed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Terence Boes whose telephone number is (571) 272-4898. The examiner can normally be reached on Monday - Friday 9:00 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on (571) 272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TB
12/7/06



RICHARD RIDLEY
SUPERVISORY PATENT EXAMINER